

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A device to analyze ~~or reconstruct one or more a~~ signal signals I_j coming from one or more a light sources, source, comprising at least:
[[•]] means [[to]] ~~for separate~~ separating the signals ~~I_j signal~~ into at least two input signals;
 I_{j1} and I_{j2} ,
[[•]] at least two channels V_1, V_2 respectively possessing a gain G_1, G_2 and a dynamic range,
 D_1, D_2 , said channels ~~having~~ are each configured to have a converter tube, at least one sensor,
and ~~being adapted to obtain, at output, a signal I'_{j1}, I'_{j2} to generate at least one output signal~~
with ~~amplitudes $A_{j1}(t), A_{j2}(t)$~~ a first amplitude $A_{j1}(t)$ and a second amplitude $A_{j2}(t)$; and
[[•]] a device ~~for the processing~~ configured to process [[of]] the output signals, I'_{j1}, I'_{j2}
~~adapted to memorizing wherein the device configured to process includes a memory unit~~
configured to store at least one of the first amplitude $A_{j1}(t)$ and second amplitude $A_{j2}(t)$
 $A_{j1}(t), A_{j2}(t)$, ~~of at least one of the two output signals I'_{j1}, I'_{j2} when I'_{j1} and/or I'_{j2} one of~~
the output signals is below a threshold value $[S_{max}]$ and ~~to determining a determination unit~~
configured to determine [[the]] an amplitude $[A_j(t)]$ of the ~~corresponding~~ signal from the
light source, $[I'_j]$ and
said converter tubes are configured to convert the input signal into an electron beam
that impacts a screen and said sensor is configured to sense an image on the screen and
generate the output signal.

Claim 2 (Currently Amended): $[A]$ The device according to claim 1, wherein the
signal processing device configured to process further comprises: works as follows:
for a signal I'_j corresponding to a given spatial position j

~~• if the amplitude $A_{j1}(t)$ is smaller than or equal to a threshold value S_{\max} then the processing device stores the pair of values $(A_{j1}(t), t)$,
a device configured to store a pair of values $(A_{j1}(t), t)$, where t is time, if the first amplitude is smaller than or equal to the threshold value;~~
~~• if the amplitude $A_{j1}(t)$ is greater than the threshold value S_{\max} , then the processing device stores the pair of values $(A_{j2}(t), t)$ and
a device configured to store a pair of values $(A_{j2}(t), t)$, where t is time, if the second amplitude is greater than the threshold value; and~~
[[•]] a device configured to determine, from the stored values $(A_{j1}(t), t)$, $(A_{j2}(t), t)$, the device determines the a corresponding values values of amplitude $A_{ji}(t)$ in order to obtain of the signal from the light source.[[I_j.]]

Claim 3 (Currently Amended): [[A]] The device according to one of the claims
claims 1 or 2, wherein said means [[of]] for separating the signal I_j have from the light source
has an attenuation coefficient K determined so that K is smaller than or equal to the dynamic
range of at least one of said channels, V_1, V_2 .

Claim 4 (Currently Amended): [[A]] The device according to claim 3, claims 1 or 2,
wherein the means [[of]] for separation separating have a value of has an attenuation
coefficient K with a value that is substantially equal to the dynamic range of at least one of
said channels, V_1, V_2 .

Claim 5 (Currently Amended): [[A]] The device according to one of the claims 1 [[to
4]] or 2, wherein the sensors are streak cameras.

Claim 6 (Currently Amended): ~~[[A]] The device according to one of the claims 1 [[to~~
5]] or 2, comprising:

n channels having a dynamic range, $[[D_n]]$ where n is an integer, and

(n-1) means $[[of]]$ for separating the signal, ~~or signals I_j .~~

7. (Canceled)

Claim 8 (Currently Amended): A method ~~to analyze~~ of analyzing a signal from a
light source $[[I_j]]$ with a wide dynamic range, wherein it comprises at least the following
steps: comprising steps of:

$[[a)]$ separating the signal to be analyzed into at least two input signals: $I_{j+1}, I_{j+2},$

$[[b)]$ making each input signal I_{j+1}, I_{j+2} go through at least one channel V_1, V_2 comprising
including a converter tube, at least one sensor, and each of the channels having a dynamic
range: $D_1, D_2,$

converting the input signal into an electron beam that illuminates a screen and said
sensor senses an image on the screen and generates an output signal.

$[[c)]$ memorizing each output signal P_{j+1} and P_{j+2} coming from the two channels V_1 and V_2 in
digital form so as to obtain, for an index j, the values of the corresponding amplitudes a first
amplitude $A_{j1}(t)$ and a second amplitude $A_{j2}(t)[[.]]$:

(d) reading $[[the]]$ values of the first amplitude $A_{j1}(t)$ and comparing each of the values with a
threshold value: $[[S_{max}]]$

$[[e)]$ if $[[A_{j1}(t)]]$ the first amplitude $A_{j1}(t)$ is smaller than the threshold value $[[S_{max}]]$,

memorizing the value of the amplitude $A_{j1}(t)$ and $[[the]]$ a corresponding instant t, where t is
time;

[[f]] if $A_{j1}(t)$ the first amplitude $A_{j1}(t)$ is greater than the threshold value, S_{max} , then memorizing the value $A_{j2}(t)$ and [[the]] corresponding instant t, where t is time;

[[g]] determining the resultant amplitude of the signal from the light source $A_j(t)$ from [[the]] pairs of values having an amplitude $\{(A_{j1}(t), t), (A_{j2}(t), t)\}$. $(A_{j1}(t), t), (A_{j2}(t), t)$.

Claim 9 (Currently Amended): [[A]] The method according to claim 8, wherein the signal from a light source is split up separated into several signals, I_j with j varying spatially, and wherein the steps of claim 8 (a) to (g) are reiterated for each of the values of j. of the separated signals.

Claim 10 (Currently Amended): [[A]] The method according to one of the claims 8 and 9, wherein the threshold value S_{max} corresponds to the value of saturation of the sensor with the smallest dynamic range.

Claim 11 (Currently Amended): [[A]] The method according to one of the claims 8 to 10, claims 8 or 9, wherein a sensor comprises a streak camera.

Claim 12 (Currently Amended): [[A]] The method according to one of the claims 8 to 10, claims 8 or 9, wherein the signal from the light source to be analyzed I_j corresponds to [[the]] a projection of a single laser beam through a slot.

Claim 13 (Currently Amended): [[A]] The method according to one of the claims 8 to 10, claims 8 or 9, wherein the analyzed signal I_j is a linear image coming from a spectrometer or [[the]] a section of a physical phenomenon.

Claim 14 (Currently Amended): ~~[[A]] The method according to one of the claims 8 to 10, claims 8 or 9, wherein the signal from a light source to be analyzed I_j is a signal formed by a row of optic fibers, each of the fibers producing a signal having an index j .~~